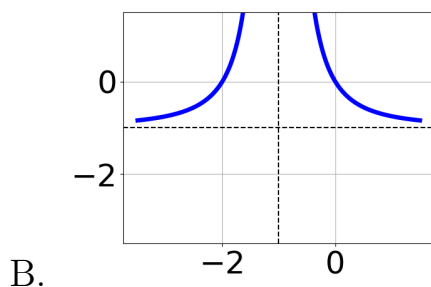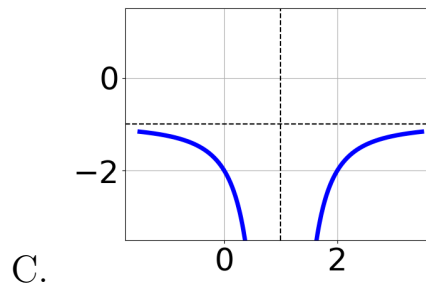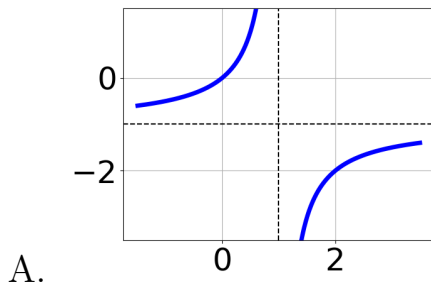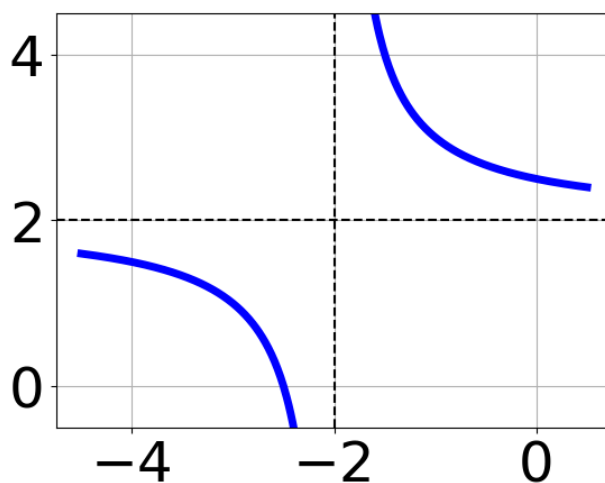1. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x-1)^2} + 1$$

A.

C.

B.

D.

E. None of the above.

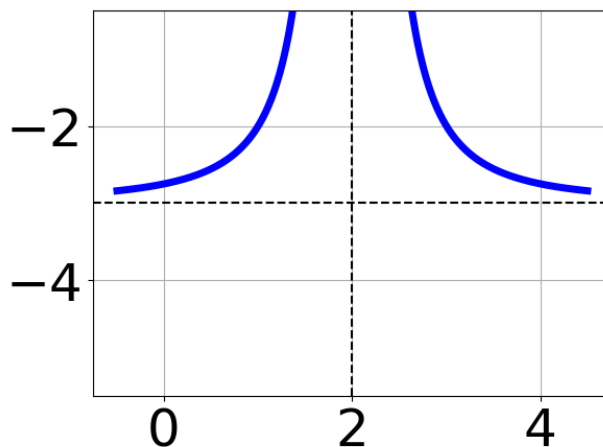
2. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{-1}{(x+2)^2} + 2$

B. $f(x) = \dfrac{-1}{x+2} + 2$

C. $f(x) = \dfrac{1}{x-2} + 2$

D. $f(x) = \dfrac{1}{(x-2)^2} + 2$

E. None of the above

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3. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{1}{(x+2)^2} + 4$

B. $f(x) = \dfrac{-1}{(x-2)^2} + 4$

C. $f(x) = \dfrac{-1}{x-2} + 4$

D. $f(x) = \dfrac{1}{x+2} + 4$

E. None of the above

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4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\dfrac{5}{9x-4} + -8 = \dfrac{-6}{-63x+28}$$

A. $x_1 \in [-0.2, 2.1]$ and $x_2 \in [0.51, 0.61]$

B. $x_1 \in [-0.5, -0.2]$ and $x_2 \in [0.43, 0.53]$

C. $x \in [-0.5, -0.2]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [-0.5, 1.5]$

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5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{4x - 3} + \frac{-3x^2}{-12x^2 - 19x + 21} = \frac{-6}{-3x - 7}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-0.32, 0.21]$ and $x_2 \in [-1.51, -0.74]$

C. $x \in [-3.39, -1.55]$

D. $x \in [0.73, 1.4]$

E. $x_1 \in [0.73, 1.4]$ and $x_2 \in [-2.36, -2.22]$

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6. Determine the domain of the function below.

$$f(x) = \frac{5}{15x^2 - 37x + 20}$$

A. All Real numbers except $x = a$, where $a \in [0.67, 1.06]$

B. All Real numbers.

C. All Real numbers except $x = a$, where $a \in [14.93, 15.63]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [14.93, 15.63]$ and $b \in [19.8, 21.54]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [0.67, 1.06]$ and $b \in [0.92, 2.78]$

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7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-8}{-2x-5} + -8 = \frac{6}{-14x-35}$$

A. $x \in [-1.95, -0.95]$

B. $x_1 \in [-1.95, 0.05]$ and $x_2 \in [3.05, 4.05]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [3.05, 4.05]$

E. $x_1 \in [-1.95, 0.05]$ and $x_2 \in [-2.62, -0.62]$

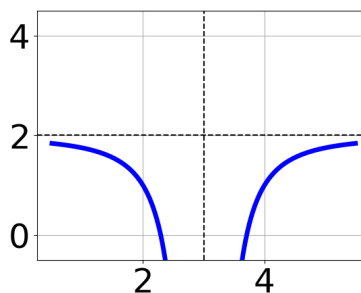8. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

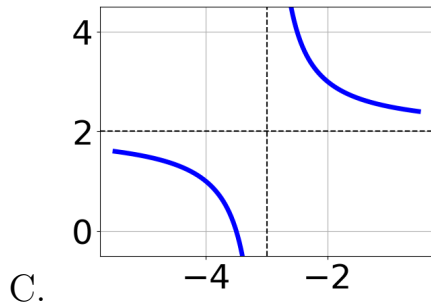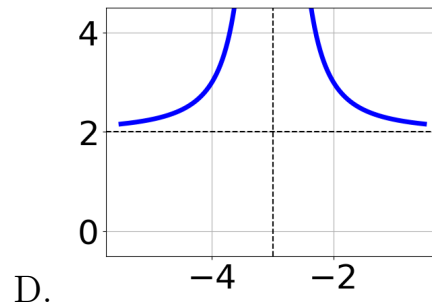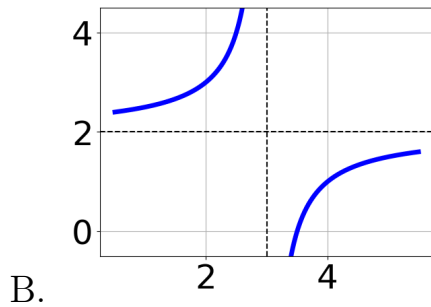$$\frac{-6x}{3x+4} + \frac{-4x^2}{12x^2+28x+16} = \frac{7}{4x+4}$$

A. $x_1 \in [-1.45, -1.13]$ and $x_2 \in [-1.26, 0.58]$

B. $x \in [-1.07, -0.84]$

C. $x \in [-1.45, -1.13]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-0.86, -0.73]$ and $x_2 \in [-2.56, -1.23]$

9. Choose the graph of the equation below.

$$f(x) = \frac{1}{x+3} + 2$$

A.

B.

D.

C.

E. None of the above.

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10. Determine the domain of the function below.

$$f(x) = \frac{4}{24x^2 + 34x + 12}$$

A. All Real numbers except $x = a$, where $a \in [-24.07, -23.74]$

B. All Real numbers except $x = a$, where $a \in [-0.81, -0.75]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.07, -23.74]$ and $b \in [-12.04, -11.91]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.81, -0.75]$ and $b \in [-0.69, -0.66]$